

What is claimed is:

1. In producing metal foil by passing an electric current between a cylindrical cathode immersed in an electrolytic solution and an anode opposed to the cathode, continuously
5 electrodepositing a metal layer on a surface of the cathode while rotating the cathode and thereafter peeling the metal layer off, a process for producing metal foil characterized in that an auxiliary anode capable of adjusting the current density when electrodeposition is started is disposed at one side of the
10 cathode where an unelectrolyzed portion thereof is brought into the electrolytic solution, at a position downstream from the anode with respect to the direction of flow of the electrolytic solution, the auxiliary anode being an electrode having a coating layer comprising an electrode active substance containing a
15 platinum group metal or a platinum group metal oxide, or a mixture of an oxide of a valve metal and a platinum group metal or a platinum group metal oxide and formed over an electrically conductive metal substrate comprising titanium or a titanium alloy, with an intermediate layer of tantalum or a tantalum alloy
20 formed between the coating layer and the substrate.

2. A process for producing metal foil according to claim 1 wherein the metal foil is copper foil.

3. A process for producing metal foil according to claim 1 wherein the titanium alloy is an alloy selected from the group
25 consisting of titanium-tantalum, titanium-tantalum-niobium and titanium-palladium, or a combination of at least two of these alloys.

4. A process for producing metal foil according to claim 1 wherein the intermediate layer is formed by sputtering, ion plating or vacuum evaporation.

5 5. A process for producing metal foil according to claim 1 wherein the tantalum alloy is a tantalum-niobium alloy and/or a tantalum-titanium alloy.

6. A process for producing metal foil according to claim 1 wherein the intermediate layer is 1 to 10 μm in thickness.

7. A process for producing metal foil according to claim 10 1 wherein the valve metal is selected from the group consisting of titanium, tantalum, niobium and zirconium, or is a combination of at least two of these metals.

8. A process for producing metal foil according to claim 1 wherein the electrode active substance is a mixture selected 15 from the group consisting of a mixture of iridium oxide and tantalum oxide, mixture of iridium oxide and titanium oxide, mixture of iridium oxide and ruthenium oxide, mixture of iridium oxide, ruthenium oxide and titanium oxide, mixture of ruthenium oxide and titanium oxide, and mixture of ruthenium oxide and 20 tantalum oxide, or a combination of at least two of these mixtures.

9. A process for producing metal foil according to claim 1 wherein the electrode active substance contains a mixture of 60 to 95 wt. % of iridium oxide calculated as metallic iridium and 5 to 40 wt. % of tantalum oxide calculated as metallic tantalum.

25 10. A process for producing metal foil according to claim 1 wherein the electrode active substance contains a mixture of 70 to 95 wt. % of iridium oxide calculated as metallic iridium

and 5 to 30 wt. % of tantalum oxide calculated as metallic tantalum.

11. A process for producing metal foil according to claim 1 wherein the coating layer is formed by thermal decomposition, electrochemical oxidation or powder sintering.

5 12. A process for producing metal foil according to claim 1 wherein the coating layer is 1 to 50 μm in thickness.